

5 **OVEREXPRESSION OF AMINOACYL-tRNA SYNTHETASES FOR EFFICIENT
PRODUCTION OF ENGINEERED PROTEINS CONTAINING AMINO ACID
ANALOGUES**

ABSTRACT OF THE DISCLOSURE

10 Methods for producing modified polypeptides containing amino acid analogues are disclosed.

The invention further provides purified dihydrofolate reductase polypeptides, produced by the methods of the invention, in which the methionine residues have been replaced with homoallylglycine, homoproparglycine, norvaline, norleucine, *cis*-crotylglycine, 15 *trans*-crotylglycine, 2-aminoheptanoic acid, 2-butyrylglycine and allylglycine.